

STRESS AND CANCER

BY DR. ELIZABETH M. WHELAN

Are you under a great deal of stress at work?

Have you any idea how much you can safely take?

What's your blood pressure reading? When was the last time you had it checked? Far too few of us are aware of the killing toll stress takes.

Stress is widely recognized as a causative factor in a number of diseases, notably ulcers and hypertension. But now there is a new and dramatic question being asked: Is stress an important link in cancer development? Can the way you handle stress (for instance, stifling your feelings) affect your chance of developing this disease? Very possibly, according to evidence presented at the Third International Symposium on Detection and Prevention of Cancer held recently in New York City.

Right now, medical scientists are looking closely at three related questions. First, what effect may traumatic events such as the loss of a loved one or a huge financial loss have on susceptibility to cancer? Second, is there a "cancer-prone" personality—a type of person who deals with life stresses in a manner which predisposes him or her to cancer? Third, how may the biological changes which occur when we are under stress affect the ability of our body's defense system to protect us from cancer-causing agents?

• STRESS AND SUSCEPTIBILITY TO DISEASE

No day goes by without all kinds of stress—driving to work, playing tennis, catching a train, giving a dinner party. Even waking up in the morning is a form of stress which jars our fully relaxed bodies. But the stress of interest to a small but growing group of cancer researchers is beyond the everyday variety. It is the type that leads to deep depression, constant stomach-churning, anxiety, prolonged frustration.

The fact that unusually stressful life's or lifestyle's can predispose us toward disease is well known. For instance, many studies have shown that air traffic controllers, who are under constant stress, have a much higher rate of high blood pressure, stomach ulcers, diabetes and other diseases than do people in less demanding airline positions. Clinicians are constantly impressed by the influence of the psyche on susceptibility

to physical disease.

Theories linking stress and cancer have been around for a long time. In the 1800s the renowned physician Sir James Paget wrote: "The cases are frequent in which deep anxiety, deferred hope and disappointment are quickly followed by the growth or increase of cancer."

A classic study done during the 1960s lent some modern supporting data to that 19th-century observation. William A. Greene, a psychiatrist at the University of Rochester, studied the life history of three sets of twins. One twin out of each set developed leukemia. He found that these three had experienced a psychological upheaval right before the onset of the disease. The three others had undergone no similar stress. Dr. Green concluded that psychological trauma might well be a precipitating factor in cancer.

Dr. H. J. F. Baltrusch, a researcher from the International Psychosomatic and Cross-Cultural Leukemia Project in West Germany, reported to the cancer symposium on a study of more than 8,000 patients with different types of cancerous lesions. "In the majority of patients," he said, "clinical manifestations of malignancy occurred during a period of severe and intensive life stress frequently involving loss, separation and other bereavement."

• IS THERE A CANCER-PRONE PERSONALITY?

Severe life stress may be important in bringing about or promoting cancer, and so may be the way we handle that stress. From 1948 to 1964, Dr. Caroline B. Thomas collected physical and psychological profiles of 1,337 medical students at Johns Hopkins. She kept track of them by means of yearly questionnaires and recorded the cause of death if it occurred. Dr. Thomas found that cancers tended to develop in people who were generally quiet, nonaggressive and emotionally contained.

Dr. René C. Mastrovito, a psychiatrist from the Department of Neurology at

Memorial Sloan-Kettering Cancer Center in New York, presented at the cancer symposium additional evidence of a cancer-prone personality. In a detailed psychological study of women admitted for gynecological checkups, he found that women with cancer were highly controlled and conforming, and less adventurous, assertive, competitive and spontaneous than those whose cancer tests were negative. Dr. Mastrovito's observations were bolstered by those of Dr. S. Greer from King's College Hospital in London. He reported a significant link between breast cancer and abnormality in the release of emotions, particularly extreme suppression of anger and a bottling up of feelings.

But exactly how could the stress of emotional trauma—or repression of anger and other emotions—affect the probability of cancer development? What type of biology could be involved?

• MICE MEN AND CANCER
Some recent animal experiments offer possible answers. Dr. Vernon Riley and his colleagues, Drs. Darrel Spackman, George Santisteban and Heather McGlahan of the Pacific Northwest Research Foundation in Seattle, have demonstrated that stress brings about physiological changes which affect susceptibility to cancer. In one experiment, they selected a strain of mice which is highly cancer-prone. Under most conditions, 80 to 100 per cent of these animals develop tumors within 8 to 18 months after birth. But when the researchers put them behind protective barrier, keeping them free of the normal laboratory noise and other motion which might generate anxiety and stress, only 7 per cent developed cancer after 14 months.

In another experiment with laboratory animals, Dr. Riley showed that rotating them gently on a turntable was enough to lead to higher cancer rates.

The stress evidently brings about significant hormone changes which interfere with the animals' immunologic defense system against cancer. Are there any implications for humans in this research? Dr. Riley and others think there are.

If we are in good health our "cancer surveillance system" is operating effectively. Many researchers believe that we encounter cancer-causing agents every day, but are not affected by them because our immune system rejects them before they can begin the cancer growth process.

If we follow the same stress response pattern as animals (and so far we have no reason to believe that we don't), it appears that less or prolonged stress can interfere with that surveillance system. Our adrenal and pituitary glands produce ACTH, cortisone and other hormones which stimulate certain body reactions. Some of these stress-induced chemical changes probably cause no ill effects—the body still goes on fighting off carcinogens. But if the system gets overloaded there may be serious trouble. Indeed, excessive amounts of those perfectly natural physiological changes which accompany stress may damage our immunological apparatus to the extent that we are left vulnerable. It may be for only a very short period of time, but even that period may be crucial.

• STRESS, CANCER AND YOU

If stress does predispose to cancer, what are we going to do about it? Researchers are now taking a close look at those alterations in the cancer-resistance system that may be induced by stress, with the hope of coming up with some type of blocking agent which would keep the body on an even hormonal keel despite aggravating external events. (CONTINUED ON PAGE 14681)

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would keep our defense system in continuous working order so that cancer-causing agents are thwarted—in a continuous, uninterrupted manner.

Another approach is psychological screening techniques to identify high-risk patients before a cancer actually develops. Drs. Claus and Marjorie Bahnsen, a husband-wife psychology team at the Eastern Pennsylvania Psychiatric Institute, have developed a questionnaire which covers topics such as loss and reactions to loss of close relatives, stress and recent life changes, personality characteristics and means of handling stress. They feel this research-diagnostic tool can help identify potential cancer victims early, in time for prevention or effective treatment.

In the meantime, Dr. Riley and others feel we can act on the knowledge collected to date. Perhaps there is indeed something therapeutic—and advantageous for the maintenance of our disease-surveillance mechanism—about ventilating feelings, instead of keeping them all inside.

We could also learn something from the Mormons and Seventh Day Adventists—two groups with unusually low incidences of cancer.

True, most neither smoke nor drink and may eat differently from the rest of us. But cancers that have nothing to do with smoking, drinking or eating are also low. Does it have something to do with their attitude toward life—their more serene outlook?

"Could be," says Dr. Riley. "They have closer family relationships, too—and generally less external stress. All we know is that if you want to minimize your chances of cancer, give up cigarettes, eat less fatty food, keep thin—and live the most serene lifestyle circumstances permit."

He adds, "I know that's a big order. But we are learning more and more about the possible link between stress and cancer. It's getting to be a very exciting field."

Dr. Riley is obviously enthusiastic about his research—but he is also quite relaxed.

EDITOR'S NOTE: Dr. Elizabeth M. Whelan is the co-author, with Dr. Fredrick J. Stare of *Panic in the Pantry* (Atheneum) and author of *A Baby? Maybe: A Guide to Making the Most Fateful Decision of Your Life* (Bobbs-Merrill). She is currently working on a book on cancer and the environment.

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